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ABSTRACT

The present study was a cross-sectional examination of the causes of adolescent participation in risky behaviors, using a diverse sample of adolescents from a Midwestern state. This research compared the relative effects of a traditional explanation of deviant behavior, differential association theory, with a modern derivative, nonsocial reinforcement theory. Quantitative data were collected via questionnaires in the spring of 1998 from 86 students at a public high school, 12 students from a for-profit high school, and 16 students from a detention facility for status offenders. Respondents were asked to indicate the extent of their involvement with cigarettes, alcohol, and various drugs. The multiple linear regression results indicated that while both differential association and nonsocial reinforcement had statistically significant effects on involvement with drugs and alcohol in this sample, nonsocial reinforcement theory had a stronger explanatory effect than differential association. Further, contrary to official statistics, neither gender, race, or social class had a statistically significant effect upon engagement in the risk-taking behaviors in this study. (Contains 25 references.) (Author/KB)

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Risky Behaviors Among Adolescents in the Midwest:

Personal Gratification or Peer Pressure?

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These data were collected as part of the Indiana High School Youth Study in the Spring of 1998. Dr. David May was the principal investigator for the project. **Please do not cite or reprint without permission from the lead author**. He can be reached at: David May, School of Public and Environmental Affairs, Indiana University-Purdue University Fort Wayne, 2101 Coliseum Blvd. East, Fort Wayne, IN 46805. Phone- 219-481-6531; Fax- 219-481-6346; email-- mayd@ipfw.edu.

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Abstract

The present study was a cross-sectional examination of the causes of participation in risky behaviors using a diverse sample of adolescents from a Midwestern state. This research compared the relative effects of a traditional explanation of deviant behavior, differential association theory, with a modern derivative, nonsocial reinforcement theory. Quantitative data were collected via questionnaires in the spring of 1998 from 114 adolescents at a public high school and two alternative educational settings. Respondents were asked to indicate the extent of their use of cigarettes, alcohol, and various drugs in the past few years. The multiple linear regression results from this study indicated that while both differential association and nonsocial reinforcement had statistically significant effects on involvement with drugs and alcohol in this sample, differential association theory had a stronger explanatory effect than nonsocial reinforcement. Further, contrary to official statistics, neither gender, race, or social class had a statistically significant effect upon engagement in adolescent risk-taking behaviors in this study. The implications of these findings are discussed.

Risky Behaviors Among Adolescents in the Midwest:

Personal Gratification or Peer Pressure?

In recent years, school and community agencies have struggled to understand various risk-involved behaviors among youth. With the general perception among adults (often fueled by the media) that youth today are more heavily involved in deviant behavior and crime than youth in the past, the exploration of risky behavior among youth has become an important yet volatile area of study. Further, with the recent volatile acts of deviant and violent behavior within local public schools (i.e., Colorado, Georgia) it becomes increasingly important to adequately describe and define those factors that are commonly associated with risky and deviant adolescent behavior.

Current evidence does seem to indicate that youth today are more heavily involved in at least some risky behaviors than in the past. One in three (34 percent) youth 12 to 17 years of age have smoked cigarettes, and more than half of all youths who smoke have their first cigarette before the age of 12. Furthermore, even though the drinking age is 21 in all states, 41 percent of youth aged 12 to 17 have consumed alcohol in their lifetime (Greenfeld, 1998) and 71 percent of high school seniors have used alcohol in the past twelve months (Kaufman, Chen, Choy, Chandler, Chapman, Rand, and Ringel, 1998). Incidences of drinking and driving and fatalities related to this behavior have also increased in recent years. In 1996, there were over 42,000 arrests for driving while intoxicated (DWI) among those 18 years of age and under (Greenfeld, 1998). Consequently, the juvenile arrest rates for drunkenness, liquor law violations, and driving under the influence all increased between 31 and 35 percent between 1993 and 1997 (Snyder,

1998). Therefore, official statistics suggest that adolescents' experimentation with alcohol appears to be as prevalent (and perhaps more prevalent) today as in recent years.

Another risky behavior that youth increasingly participate in is drug use. In 1996, juveniles were involved in 14 percent of all drug arrests; between 1993 and 1997, juvenile arrests for drug abuse violations increased 82 percent (Snyder, 1998). Marijuana continues to be a highly popular drug in all regions of the country, particularly among young people (Office of National Drug Control Policy [ONDCP], 1998).

Drug use among teens, however, is not limited to alcohol and marijuana. Treatment providers in many areas of the country report that users, particularly youthful offenders, enter treatment with a background of hallucinogen, marijuana, and alcohol use as their problem, rather than a single drug (ONDCP, 1998).

Because of the propensity for youth to engage in risky and often deviant behavior, numerous researchers have searched for the causes of such risky behavior. This study explores the causes for participation in these activities by comparing the relative effects of two explanations of deviance, differential association theory and nonsocial reinforcement theory. Using participants from three diverse educational settings, this study further develops the literature in this area by also examining the effect that the institutional setting may have upon engagement in risky behavior, and the effect that institutional settings have on the relationship between these explanations of delinquency and risky behavior.

Literature Review

The origin of risky behavior among adolescents has been important for researchers to examine for some time. Various theories suggest that social phenomena such as peer pressure,

poor family environments, lack of education and limited economic resources play a major role in encouraging these activities (see Williams and McShane (1999) for review). Accordingly, adolescents who engage in risky behavior would have to have been exposed to one of the aforementioned phenomenon that caused their activity; this, however, is not always the case. As with deviant behavior in general, there is no single, well-defined group of adolescents that engage in risky behavior. Particularly with less serious forms of delinquency (e.g. cigarette smoking, drinking, and drug use), it appears that the effect of the aforementioned factors becomes even more ambiguous.

Recognition of this phenomena has led some to argue that deviant behavior may depend on a particular personality style rather than social conditions. It could be that an adolescent engaging in deviant behavior could be doing so because of some intrinsic reward, or "high" that behavior produces. This paper examines this argument by comparing a traditional theory which argues that deviant behavior is due to social causes (Differential Association Theory- introduced by Sutherland (1939)) to a relatively new explanation of deviant behavior which argues that individuals engage in deviant behavior for internal gratification: Nonsocial Reinforcement theory (Wood, Cochran, Pfefferbaum, and Arneklev, 1995).

Differential Association Theory

Differential association theory was developed by Edwin Sutherland in his classic work Principles of Criminology, originally published in 1939. Sutherland argued that people engage in deviant activity because of "...an excess of definitions favorable to violation of law over definitions unfavorable to violation of law" (Sutherland, 1939, p. 6). Sutherland posited that individuals learn these *definitions* [italics added] from intimate personal groups; thus, according to

Sutherland, individuals learn to engage in criminal behavior through interactions with others (commonly referred to as peer groups or cliques) who have values and beliefs which encourage breaking the law (Sutherland, 1939). He labeled this principle the principle of differential association.

Differential associations may vary in frequency, duration, priority, and intensity. Associations with criminal behavior and associations with anti-criminal behavior vary in those respects. Priority is assumed to be important in the sense that behavior (either lawful or delinquent) developed in early childhood may persist throughout life. Priority seems to be important through its selective influence. Intensity has to do with such things as the prestige or the source of a criminal or anti-criminal pattern and with emotional reactions related to the associations.

Although differential association theory has been one of the major theoretical explanations of engagement in crime for over fifty years (see Akers and Lee (1996) for a thorough review of the history and present state of differential association), recently Akers (1985; 1992) has merged differential association theory with theories of operant conditioning into a broader theoretical perspective called social learning theory. Like Sutherland, Akers argued that delinquent conduct is more likely to develop when the peers of an adolescent define delinquent behavior as appropriate and reward that individual for delinquent behavior (see Winfree, Backstrom, and Mays (1994) for a review of this process). Williams and McShane (1999) reviewed numerous works which tested differential association theory and surmise that most research testing differential association has established that the association with peers who are criminal or delinquent is one of the strongest predictors of involvement in delinquency. Following Akers' and

Sutherland's theory, those whose friends have values and beliefs which encourage breaking the law will be most likely to engage in risky behavior.

Tests of this theory and its relationship with risky behavior have supported Sutherland's ideas. Akers and his associates (1979) examined the effect of social learning on reported uses of alcohol and marijuana, and determined that both were strongly related to differential association. The strength of empirical support for the theory suggests that the theory will have utility in explaining the use and abuse of other substances by adolescents. These earlier findings also indicate that differential association theory will continue to be a significant predictor of other forms of deviant behavior as well.

Recent Additions to Differential Association Theory

In recent years, a new but somewhat different approach to the source of gratification from involvement in risky behavior has emerged. Researchers have attempted to answer the question of involvement in risky behavior activities among adolescents by examining risk-taking behavior and/or impulsivity. Risk-taking behavior in which health or well-being are compromised is a particular problem among adolescents because their desire to experiment may not be tempered with appropriate decision-making skills about danger.

Moore and Rosenthal (1993) set out to explore the association between risk-taking and two personality dispositions for their sample of college students. Their results indicated that, as predicted by some earlier researchers, risk-taking activities were related to personality disposition, in this case, to dimensions of the personality associated with such characteristics as creativity and spontaneity.

Nonsocial Reinforcement Theory

Drawing upon Moore and Rosenthal's (1993) work, Wood et al. (1995) introduced the idea of nonsocial reinforcement. Nonsocial reinforcement theory is a recent extension and reformulation of differential association theory. Like differential association theory, nonsocial reinforcement theory argues that individuals continue to participate in deviant behavior because of the rewards they receive from that participation. Nonsocial reinforcement theory, however, argues that the reward comes not from external stimuli (peers) but from internal stimuli. Wood, Gove, Wilson, and Cochran (1997) argued that most people who continue to engage in deviance do so because they find the acts to be "intrinsically pleasurable." They derive this pleasure from a combination of the neurophysical "high" the behavior produces (e.g. adrenaline for theft, altered state of mind for marijuana and alcohol) and the symbolic meaning of the act (Wood et al. 1997). Thus, nonsocial reinforcement theory argues that individuals who engage in deviant behavior do so because of the intrinsic reinforcement they receive from the act, not from the reinforcement they receive from their peers.

Wood and his colleagues (1995) combined theory and research from diverse sources to help explain adolescent drug use (legal and illegal). While the results of this study suggested that thrill seeking and immediate gratification were probable motivators and reinforcers for adolescent substance use, it was unclear if this relationship would be maintained when controlling for other relevant factors. One factor that separated users from non-users in their scale was the impulsiveness of users, who scored significantly higher on the impulsivity scale than non-users. Thrill-seeking maintained a significant impact on frequency of use for each substance category. While impulsivity had a significant, positive impact on the likelihood of ever using any of the

substances represented in this study, it had a significant impact on the frequency of use only with regard to tobacco and alcohol. Impulsivity seemed to have no significant impact on the frequency of use of marijuana and "harder" drugs.

This finding seems to support the contention that initial substance use is often triggered by impulsive thrill seeking, but the decision to continue using is characterized by a need for immediate gratification which is then satisfied by the pleasure of experiencing the drug effect. According to Wood et al. (1995), examination showed that immediate gratification was the strongest predictor of frequency of marijuana and hard drug use. According to these authors, it seems that when comparing the prevalence and frequency equations, thrill seeking and impulsivity play a significant role in initiating substance use while immediate gratification may further function to maintain and reinforce continued experimentation.

Andrew and Cronin (1996) examined the relationship between sensation seeking and alcohol use in an Australian sample and compared the relative worthiness of two alternative measures of sensation seeking. The positive correlations between sensation seeking and alcohol use were consistent with previous research and therefore extended their explanation to an Australian male high school sample. The relationship suggested that the adolescent alcohol consumer was not necessarily a general sensation seeker, rather someone seeking intense experiences and social release. According to these researchers, Australian adolescent alcohol use was related to sensation seeking; it appeared to be a focus on the desire for intense experiences that predisposed the sensation seeking youth to alcohol. Research by Farley and Sewell (1976) also supports this argument.

In the research reviewed for this study, we were only able to uncover one study that compared differential association and nonsocial reinforcement theory. A study conducted by Arnett (1995) set out to test social learning theory and nonsocial reinforcement theory. He found that adolescent reckless behavior results from the interaction between certain developmental characteristics that are heightened in adolescence- particularly sensation seeking, egocentrism, and aggressiveness- and the cultural socialization environment. Cultural socialization includes: the family, peers, school, neighborhood, community, the legal system, the media, and the cultural belief system. All of these sources were determined to contribute to socialization and influence the rates and types of adolescent reckless behavior within a given culture (Arnett, 1995).

The current research literature provides supportive findings for both differential association theory and nonsocial reinforcement theory. The present study further investigated the causes of risky behavior among adolescents by using self-report surveys administered to adolescents to test the effects of differential association theory and nonsocial reinforcement theory on a risky behavior index, while controlling for demographic and situational variables previously demonstrated to affect engagement in crime and deviance.

Method

Educational Setting

Three sites were used to collect the data examined in this study. The same self-report instrument was administered at each of the three sites in the spring of 1998. The sites included: a rural public high school; a for-profit inner-city high school for troubled youth; and a detention facility for status offenders where youth attend in-house public school during the day and are housed at the facility at night. The traditional public high school site was located in a small rural community in

the Midwest where the homogenous student population consisted of a limited number of minority students (less that 5%). The total school population in grades 9 - 12 was 925 with the majority of these students living in average to low income, rural blue collar/ agricultural communities. The for-profit alternative high school was an alternative school site located in a large urban city in the Midwest designed to give students, whose behavior problems caused them to be expelled from the public schools, an opportunity to further their education in a nontraditional classroom environment where class size was generally limited to 15 students. The detention facility for status offenders was also located in a large, urban environment and housed both male and female juveniles who had been arrested for curfew violations, running away, truancy, minor consumption of alcohol, illegal possession of marijuana and drug paraphernalia, and other nonviolent offenses. These adolescents were housed in a dormitory setting under constant surveillance at night, and taught by teachers who came on site during the day.

Participants

The participants in this study consisted of 86 students from the traditional public high school, 12 students from the for-profit high school, and 16 students from the detention facility for status offenders. Forty-four percent (38) of the traditional public high school students, 50 percent (6) of the for-profit high school students, and 44 percent (7) of the students from the detention facility were male. There were 81 Caucasian, one Latino, two Asian-American, and two bi-racial students from the public high school, eight Caucasian, three African-American, and one Latino student from the for-profit high school, and eight Caucasian, four African-American, one Latino, and three bi-racial students from the detention facility.

Instrument

The instrument used to collect the data for this study was a questionnaire that consisted of a number of Likert-type questions randomly ordered using a six point scale with "strongly agree" and "strongly disagree" at the extreme ends. These questions were used to examine adolescent's attitudes and perceptions of crime; furthermore, several indicators were also included to represent various theories of crime. Finally, the questionnaire also included several questions to assess demographic characteristics (e.g. race, gender, income, parent's occupation) and a number of questions used frequently in other studies (Vowell and May, 1999; May, 1999; May, 1997) that examined the adolescent's participation in deviant activities.

Procedure

Students in the traditional public high school and the for-profit alternative high school were administered the questionnaire by the lead author during their social science class period. Students were assured of their anonymity by the researcher, and teachers were asked to leave the room to insure that their effect on the honesty of the respondents would be negligible. Students at the youth facility for status offenders were administered the survey by the facility administrator, who was given explicit instructions by the lead author to insure uniformity of administration in the alternative setting, and were assured of anonymity as well. Participants completed the questionnaires in the spring of 1998. Students required approximately one hour to complete the surveys.

Dependent Variable

Students were asked if they had ever engaged in a series of activities which many would consider risky behavior. The dependent variable in this study was a 6-item summated index that represents involvement in risky behavior. The risky behaviors included: "smoked a pack of cigarettes in one

day;" "been drunk in a public place;" "bought liquor;" "had alcoholic beverages (beer, wine, hard liquor);" "had marijuana or hashish ('grass,' 'pot,' 'hash')"; and "had hallucinogens ('PCP,' 'LSD,' 'Acid,' 'Mushrooms,' 'Peyote')." Responses of yes were coded (1) while the responses of no were coded (0).

Responses to the individual variables are presented in Table 1. Responses were summed, so that those who had engaged in none of the aforementioned activities scored (0) while those who had engaged in all of the aforementioned activities were scored (6). Cronbach's alpha ($\forall$) for the index was .781. The mean score on the risky behavior index was 2.24 for the public high school, 4.33 for the for-profit alternative school, and 2.94 for the detention facility.

Independent Variables

Race, gender, age, type of educational setting, and father's education level were included as control variables. The questions used to assess these variables are included in Appendix A. The descriptive statistics for these variables are presented in Table 1. Additionally, two multi-item indices that represent traditional differential association theory and nonsocial reinforcement theory, respectively, were constructed. The indicators used to construct and code these items are included in Appendix B.

Results

Three multiple linear regression models were used in this study to explore the relationship between differential association, nonsocial reinforcement, and engagement in risk-taking behaviors. The first model regressed the risky behavior index on the control variables (race, gender, age, father's education) and two dummy variables that represented the student's educational setting (with the traditional public high school students as the reference category).

The second model regressed the risky behavior index on the background variables and the differential association index, and the final model regressed the risky behavior index on the background variables, the differential association index, and the nonsocial reinforcement index. The results of regressing the risky behavior index on the control variables are presented in Table 2.

The control variables included in the model explained 14.6 percent of the variation in the student scores on the risky behavior index. Only the dummy variable comparing the students from the for-profit alternative school and the traditional public high school students had a statistically significant effect on the risky behavior index score ($\exists$=.357; $p<.001$); namely, students from the for-profit alternative high school scored significantly higher on the risky behavior index than their counterparts from the traditional public high school. This finding was expected and indicates that, after controlling for other known predictors of delinquency, those children who attended the for-profit alternative school were more likely to engage in risky behaviors than their traditional public school counterparts. Interestingly, none of the other variables included in the model had a statistically significant effect on the students' score on the risky behavior index, including the dummy variable representing those adolescents who were housed in the facility for status offenders compared to public high school students. These findings are discussed in detail below.

The results of the second model regressing the risky behavior index on the control variables and the differential association index are presented in Table 3. With the addition of the differential association index as a predictor variable in the model, the explained variance in the risky behavior index increased to 48.9 percent. The students from the for-profit alternative school

again scored significantly higher on the risky behavior index than their counterparts from the traditional public high school (∃=.198; p<.05), while, as expected, those students who scored higher on the differential association index (indicating that their friends and family were less condemning of deviant behavior) also scored significantly higher on the risky behavior index (∃=.612; p<.001). Again, none of the other variables included in the model had a statistically significant effect on engagement in risky behavior.

Finally, the results of the third model that regressed the risky behavior index on the control variables, the differential association index, and the nonsocial reinforcement index are presented in Table 4. The inclusion of the nonsocial reinforcement index increased the explained variance in the risky behavior index to 58.1 percent. The students from the for-profit alternative high school again scored higher on the risky behavior index than their counterparts from the traditional public high school (∃=.226; p<.01) while those scoring higher on the differential association index remained significantly more likely to have higher scores on the risky behavior index (∃=.413; p<.001). With the inclusion of the nonsocial reinforcement index, however, the nonsocial reinforcement index became the second best predictor of engagement in risky behavior (∃=.364; p<.001), indicating that those students who obtained internal gratification from taking risks were significantly more likely to score higher on the risky behavior index. Additionally, with the inclusion of the nonsocial reinforcement index, those students from the detention facility scored significantly higher than their counterparts from the traditional public high school (∃=.203; p<.05). Thus, it appears that, at least in this sample, differential association is a better predictor of engagement in risky behavior than its more recent derivative, nonsocial reinforcement theory.

Discussion

Not surprisingly, the results from this study indicate that those students from the for-profit alternative high school were more likely to engage in risky behaviors than their counterparts from the traditional public high school. Interestingly, however, neither race, gender, age, or socioeconomic status had a statistically significant effect on engagement in risky behavior. Additionally, those youth housed in the facility for status offenders were no more likely to engage in risky behaviors than their counterparts from traditional public schools until the nonsocial reinforcement index is included. These findings contradict those of several previous studies (see Sheley and Wright (1995) for review) and, as such, are dealt with in detail below.

At first glance, many might be surprised at the lack of statistically significant difference in involvement between males and females and whites and nonwhites in the risky behaviors included in this study. Official statistics highlight the fact that both males and nonwhites, specifically African-Americans, are disproportionately arrested for criminal activities (Federal Bureau of Investigation, 1998), a fact that Reiman (1998) argues is due to biases and prejudices of the criminal justice system and may not adequately reflect an accurate picture of deviance and crime in society.

Critics of official statistics agree with Reiman. Several self-report studies have indicated that Whites and Nonwhites commit about the same number of delinquent activities, although Blacks may have higher incidence rates (Gould, 1969; Hirschi, 1969; Hindelang, Hirschi, and Weis, 1981). Further, Cernkovich and Giordano (1979) also suggest that females and males are very similar in offense commission when it comes to less serious offenses, such as drug and

alcohol use (see also Canter, 1982), and class differences in self-reported delinquency follow the same pattern (see Williams and McShane (1999) for review).

Therefore, the fact that there were not significant gender, race, or class differences in the behaviors under consideration in this study is not completely unexpected. As the self-reported behaviors under consideration would have to be considered less serious delinquency, it appears that, at least in this sample, these findings confirm the argument that self-reported, nonserious delinquency is not adequately represented by official arrest statistics.

These findings may also at least partially explain the nonsignificant differences between those youth from the public school and youth at the facility for status offenders in this sample in two of the three models. It appears that those youth who, because of their contact with official social control agents (law enforcement), have been housed at the facility for status offenders are no more prone to engage in risky behavior than traditional public high school students. This finding also lends support to the argument that official statistics may misrepresent actual involvement in crime and risky behavior. It could also be the case, however, that those youth in the facility for status offenders may be more likely to engage in more serious forms of deviance not assessed in this study. Confirmation of this argument is beyond the scope of this study, but should continue to be explored in the future.

Finally, the results of this study indicate that traditional differential association theory is a stronger predictor of engagement in risky behavior than its modern derivative, nonsocial reinforcement theory. Although both theories had a statistically significant effect on engagement in the behaviors explored in this study, differential association had a stronger effect upon engagement in risk-taking behaviors than nonsocial reinforcement. Thus, it appears that the effect

of delinquent peers may be more important than the intrinsic gratification individuals receive from taking risks. Given the implications of these findings, future research should return to a more careful examination of differential association theory and its implications for deviant behavior. Finally, tests of nonsocial reinforcement theory need to be extended to larger, more heterogeneous samples, and to what many would consider to be more serious criminal behaviors to assess if the relationship uncovered in this study holds true for other samples and other more serious criminal activities.

As educational researchers continue to explore adolescent development and the factors that impact the social and emotional well-being of students, it becomes increasingly important to define factors that affect this development. It is clear that the peer group, especially for young adolescents, is a primary influence on style choices and daily activities that are pursued. Evidence also exists to suggest that the peer group, particularly for "at-risk" adolescents, may also have an impact on whether or not individuals choose to experiment in risk-taking behaviors. The results of this study also suggest that intrinsic gratification plays an important role in participation in risk-taking behaviors, regardless of the specific educational/environmental surroundings. Clearer identification of the factors that promote risky behavior involvement will serve to provide educators and researchers with additional resources to address these issues.

Appendix A

Race:

How do you describe yourself?

1. African American/Black
2. White
3. American Indian
4. Mexican American/Latino
5. Asian or Asian American
6. Bi-Racial (_____)

Recoded: 1,3,4,5,6= (1); 2=(0)

Gender:

What is your gender?

1. Male
2. Female

Recoded: 1=(1); 2=(0)

Age:

In what year were you born?

19___

Responses were subtracted from 1997 (since questionnaires were answered in early 1998) to determine age.

Father's Educational Level:

What is the highest level of schooling your father completed? **(Circle only one)**

1. 8th grade or less
2. Some high school
3. Completed high school
4. Some college
5. Completed college
6. Graduate or professional school after college
7. Other (_____)

Recoded: 7= missing

School Setting:

Two dummy variables were created to represent the school setting. The traditional public high school was used as the reference category for both variables. In "School 1," the facility for status offenders (coded 1) was compared to the traditional public high school and the for- profit alternative high school (coded 0). In "School 2," the for profit alternative education program (coded 1) was compared to the public school and to the facility for status offenders (coded 0).

Appendix B

Differential Association Index

The index used to represent differential association is a summated index consisting of responses to seven questions. Students were asked to indicate the extent to which they agreed or disagreed with the following statements:

My best friends disapprove of people trying drinks of an alcoholic beverage.
My best friends disapprove of people taking illegal drugs occasionally.
My best friends disapprove of people smoking one or more packs of cigarettes per day.
Most of the people I associate with would never break the law.
If I were thinking of breaking the law, my friends would tell me not to do it.
I am often in situations where people encourage me to do something that might be illegal.
Many people I associate with think it's okay to break the law if you can get away with it.

The responses to the first five questions were coded as follows: (1)= strongly agree, (2)= agree, (3)= somewhat agree, (4)= somewhat disagree, (5)= disagree, and (6) strongly disagree. The responses to the last two questions were recoded in reverse order. The reliability ($\forall$) for the index was .864.

Nonsocial Reinforcement Index

The index used to represent nonsocial reinforcement is a summated index consisting of responses to six questions. Students were asked to indicate the extent to which they agreed or disagreed with the following statements:

Sometimes I will take a risk just for the fun of it.
I sometimes find it exciting to do things for which I might get in trouble.
Excitement and adventure are more important to me than peace and security.
I like to take chances.
The things I like to do best are dangerous.
I like to test myself every now and then by doing something a little risky.

Responses to these six questions were coded as follows: (6)= strongly agree, (5)= agree, (4)= somewhat agree, (3)= somewhat disagree, (2)= disagree, and (1) strongly disagree. The

reliability (∀) for the index was .853.

Table 1.

Table of Descriptive Statistics for Independent Variables in Adolescent Sample

	N	Percentage of Sample
Race		
Nonwhite	17	14.9
White	97	85.1
Gender		
Male	51	44.7
Female	63	55.3
Age		
14	2	.9
15	5	3.5
16	23	29.8
17	44	38.6
18	34	20.2
19	4	4.4
20	1	1.8
Father's Educational Level		
8th Grade or less	2	1.8
Some High School	12	10.5
Completed High School	48	42.1
Some College	17	14.9
Completed College	17	14.9
Graduate or Professional School	9	7.9
Other	3	2.6
Educational Setting		
Traditional Public School (Reference Category)	86	75.4
For-Profit Alternative Setting (School 1)	12	10.5
Facility for Status Offenders (School 2)	16	14.0
Dependent Variable Indicators		
Smoked a pack of cigarettes in one day	36	31.6
Been drunk in a public place	47	41.2
Bought liquor	39	34.2
Had alcoholic beverages (beer, wine, hard liquor)	88	78.6
Had marijuana or hashish (grass, pot, hash)	54	48.2
Had hallucinogens (PCP, LSD, Acid, Mushrooms, Peyote)	23	20.5

Table 2.

Impact of Background Variables on Adolescent Engagement in Risky Behavior

Variable	B	S.E.	∃	Sig. t
Nonwhites	- 1.130	.603	-.209	.064
Male	.035	.364	.009	.924
Age	- .009	.226	-.005	.970
Father's Education	.030	.153	.019	.845
School 1	1.460	.779	.262	.064
School 2	2.236	.620	.357	.000
(Constant)	2.232	4.009		.579

Note. $R^2 = .146$

$F=2.701$; $p<.05$

Table 3.

Impact of Background Variables and Differential Association Index on Adolescent Engagement in Risky Behavior

Variable	B	S.E.	∃	Sig. t
Nonwhites	-.833	.519	-.151	.112
Male	-.046	.290	-.012	.873
Age	.160	.180	.091	.375
Father's Education	.197	.125	.125	.120
School 1	1.106	.666	.194	.100
School 2	1.228	.509	.198	.018
Differential Association Index	.138	.018	.612	.000
(Constant)	-4.479	3.261		.173

Note. $R^2 = .489$

F= 12.432; $p<.001$

Table 4.

Impact of Background Variables, Differential Association Index, and Nonsocial Reinforcement Index on Adolescent Engagement in Risky Behavior

Variable	B	S.E.	∃	Sig. t
Nonwhites	-.758	.490	-.129	.125
Male	-.200	.274	-.053	.467
Age	.179	.167	.098	.286
Father's Education	.101	.118	.064	.395
School 1	1.248	.612	.203	.044
School 2	1.386	.467	.226	.004
Differential Association Index	.092	.019	.413	.000
Nonsocial Reinforcement Index	.110	.026	.364	.000
(Constant)	-5.695	3.032		.064

Note. $R^2 = .581$

F= 15.239; $p<.001$

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